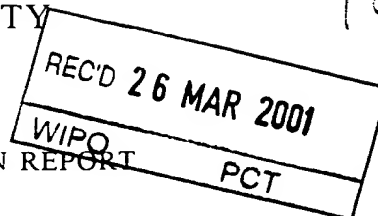


PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference FPO764-3/TAC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/13592	International filing date (day/month/year) 16 JUNE 1999	Priority date (day/month/year) 19 JUNE 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): B60R 21/20; and US Cl.: 280/728.3, 732		
Applicant TEXTRON AUTOMOTIVE COMPANY, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 10 JANUARY 2000	Date of completion of this report 15 FEBRUARY 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer PETER ENGLISH <i>Diane Smith f</i>
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/13592

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed☒ the description:

pages 1-36, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the claims:

pages 37-43, as originally filed
pages NONE, as amended (together with any statement) under Article 19
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the drawings:

pages 1-23, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

☒ the sequence listing part of the description:

pages NONE, as originally filed
pages NONE, filed with the demand
pages NONE, filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig. NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/13592

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)	Claims	<u>11-14,16-29,34,36,37,39</u>	YES
	Claims	<u>1-10,15,30-33,35,38,40,41</u>	NO
Inventive Step (IS)	Claims	<u>11-14,18,19,28,29</u>	YES
	Claims	<u>1-10,15-17,20-27,30-41</u>	NO
Industrial Applicability (IA)	Claims	<u>1-41</u>	YES
	Claims	<u>NONE</u>	NO

2. citations and explanations (Rule 70.7)

1. Claims 1-10, 15, 30-33, 35 and 38 lack novelty under PCT Article 33(2) as being anticipated by Masutoshi et al. (JP 5-185896).

Masutoshi et al. discloses an air bag assembly comprising: an instrument panel 21 including a retainer 22, a layer of foam 23 and a skin 24; a U-shaped tear seam 26 and a hinge (see Figs. 5 and 6) formed in the retainer 22 and defining a door which is integral with the retainer; an air bag canister 30 containing an air bag 29 and secured to the retainer 22 (see Figs. 3-6); and a reaction plate 36 or 37 located between the air bag 29 and the door, with a tether portion (see Figs. 5-8) of the reaction plate 36 or 37 secured to the retainer 22 and the canister 30 by screw fasteners 38 threaded into bosses extending inward from the retainer 22 (see Fig. 6). The tether portion of the reaction plate 36 or 37 is separated from a pivotal panel portion thereof by a hinge portion (see Figs. 5-8). As shown in Fig. 2, the door may have one or more arcuate corners.

2. Claims 40 and 41 lack novelty under PCT Article 33(2) as being anticipated by Yamamoto et al. (JP 6-227351) or Inoac Corp. (JP 7-246900).

Yamamoto et al. discloses an air bag door assembly including tubular channels 4 adjacent tear seams 2. The door assembly is formed by injection molding, and the tubular channels are formed by gas injection (see Figs. 1-5 and the abstract).

Inoac Corp. discloses an air bag door assembly including tubular channels 14 adjacent tear seams 15. The door assembly is formed by injection molding, and the tubular channels are formed by gas injection (see Figs. 1-11).

3. Claims 16 and 17 lack an inventive step under PCT Article 33(3) as being obvious over Masutoshi et al.

Masutoshi et al. meets all the limitations of claim 1 as set forth in item 1 above but lacks a thermoplastic reaction plate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form Masutoshi et al.'s reaction plate from thermoplastic material in order to reduce the weight of the plate and provide it with greater flexibility. (Continued on Supplemental Sheet.)

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

1. The drawings are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or content thereof:
 - Fig. 15 appears twice, once on sheet 11 and again on sheet 12;
 - in Fig. 24, "220 " should be "220 ";
 - in Fig. 26, the "circle A" is not shown (see page 8, line 19);
 - in Fig. 26, the tear seams 316 do not resemble one another (i.e., the upper tear seam is much wider than the lower one and resembles a hinge rather than a tear seam) and further do not resemble the tear seam 316 shown in Fig. 28 (i.e., they lack the groove shown in Fig. 28); and
 - in Fig. 29, "324 " should be "324", and "336 " should be "336".
2. The drawings are objected to because they include the following reference sign(s) not mentioned in the description: 415, 432 and 444, shown in Figs. 31 and 32; 450, shown in Fig. 31; 415 and 432, shown in Figs. 33 and 34; and 450, shown in Fig. 33.
3. The drawings are objected to for failing to show every feature of the invention specified in the claims. The drawings do not show a mold configured to form the shape of an air bag door having a tear seam, a trim panel integral with the door, and a tubular channel (claims 40 and 41).
4. The description is objected to as containing the following defect(s) under PCT Rule 66.2(a)(iii) in the form or contents thereof:
 - at page 1, line 5, "filed October 14, 1997," should be inserted before "attorney";
 - at page 1, line 5, "now Patent No. 5,941,558," should be inserted before "which";
 - at page 1, line 8, "U.S. provisional patent applications" should be "the following U.S. provisional applications:";
 - at page 7, line 23, "and" should be deleted;
 - at page 7, line 25, "construction," should be "construction:";
 - at page 8, lines 16-17, the brief description of Fig. 27 is inaccurate since Fig. 27 shows a vehicle door assembly, while Figs. 25 and 26 show an instrument panel assembly;
 - at page 8, line 18, "2" should be "26";
 - on page 9, lines 5-10 should be deleted in their entirety since the drawings do not include Figures 36-38;
 - at page 24, line 29, "422" should be "428";
 - at page 25, line 23, "are" should be inserted before (Continued on Supplemental Sheet.)

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. The description is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 5 because it fails to adequately enable practice of the claimed invention because: the specification fails to describe in any detail, and the drawings fail to show, a method of molding an air bag door assembly, as claimed in claims 40 and 41. The apparatus for performing the method (including the "mold" recited in claims 40 and 41) is not described or shown. The details of the procedure which is followed is also not provided.

2. Claims 40 and 41 are objected to as lacking clarity under PCT Rule 66.2(a)(v) because practice of the claimed invention is not enabled as required under PCT Rule 5.1(a) for the reasons set forth in the immediately preceding paragraph.

3. Claims 3-5, 12, 13, 23-25, 27, 29, 36-38, 40 and 41 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claims are indefinite for the following reasons.

Claims 3 and 4 are indefinite because they attempt to combine two separate elements into a single element. Claim 1 sets forth three separate elements: a support structure, a vehicle panel and an air bag dispenser. Claim 3 attempts to define the support structure and the vehicle panel as a single element, thereby contradicting claim 1. Claim 4 attempts to define the support structure and the air bag dispenser as a single element, thereby also contradicting claim 1.

In claim 3, at line 2, the term "the interior vehicle panel" lacks proper antecedent basis. The examiner suggests: at line 2, delete "interior".

Claim 5 fails to accurately set forth the invention. None of the embodiments include a tether which is attached to the door. The tether is either attached to the panel or the support structure. It is noted that, in some embodiments, the pivotable panel portion is attached to the door.

Claim 12 is indefinite because, due to its dependency on claim 11, it combines multiple embodiments. Claim 11 is drawn to the embodiments of Figs. 1-17 and 25-30 (ribs extending inward from the door), while claim 12 is drawn to the embodiment of Figs. 31-34 (ribs extending inward from the reaction plate).

In claim 23, at lines 3-4, the term "the...second tubular [channel]" lacks proper antecedent basis. The examiner suggests: at line 2, change "structural" to "tubular".

In claim 29, at line 2, the term "a tubular channel" is indefinite because it is unclear whether this is the tubular channel of claim 21, or a different channel.

In claim 36, at line 10, "the outer surface" is indefinite because more than one "outer surface" has been recited. The (Continued on Supplemental Sheet.)

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):

Further, such a modification involving the selection of a well-known alternative material is generally recognized as being within the level of ordinary skill in the art.

4. Claims 20 and 26 lack an inventive step under PCT Article 33(3) as being obvious over Masutoshi et al. in view of DiSalvo et al. (US 4,893,833) and Gallagher et al. (US 5,564,731).

Masutoshi et al. meets all the limitations of claims 1 and 2 as set forth in item 1 above but lacks an extensible, fanfolded tether portion and a tear seam which extends all the way around the door.

Gallagher et al. teaches a tear seam 16 which extends all the way around a door 14, and an extensible tether portion 50. DiSalvo et al. teaches an extensible, fanfolded tether portion 26 (see column 4, lines 38-43).

From these teachings of DiSalvo et al. and Gallagher et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masutoshi et al. by extending the tear seam all the way around the door and by providing the tether portion with fanfolds because this causes the door to provide less resistance to air bag deployment as the door opens and moves away from the opening in the instrument panel.

5. Claims 21-25 and 27 lack an inventive step under PCT Article 33(3) as being obvious over Masutoshi et al. in view of Yamamoto et al. (JP 6-227351) and Inoac Corp. (JP 7-246900).

Masutoshi et al. meets all the limitations of claim 1 as set forth in item 1 above but lacks tubular channels on either side of the tear seam.

Yamamoto et al. teaches an air bag door assembly including tubular channels 4 adjacent tear seams 2. The door assembly is formed by injection molding, and the tubular channels are formed by gas injection (see Figs. 1-5 and the abstract). As shown in Figs. 3 and 4, the channels 4 are on either side of the tear seam 2. Inoac Corp. teaches an air bag door assembly including tubular channels 14 adjacent tear seams 15. The door assembly is formed by injection molding, and the tubular channels are formed by gas injection (see Figs. 1-11).

From these teachings of Yamamoto et al. and Inoac Corp., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masutoshi et al. by providing tubular channels on either side of the tear seam in order to insure that the door will open properly along the tear seam.

With respect to claim 25, the examiner takes Official notice that exterior styling lines are well-known in the art. It would have been obvious to provide the outer surface of the door assembly with a styling line in order to improve the appearance of the door assembly.

6. Claims 34, 36 and 37 lack an inventive step under PCT Article 33(3) as being obvious over Masutoshi et al. in view of Ito et al. (US 5,395,668).

Masutoshi et al. meets all the limitations of claim 31 as set forth in item 1 above but lacks a hinge made of a different material than the door and retainer.

Ito et al. teaches a fabric hinge 19 having opposite ends embedded in a door 13 and a retainer 11.

From this teaching of Ito et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masutoshi et al. by providing a fabric hinge between the door and retainer in order to insure that the door will not separate from the retainer as it opens.

7. Claim 39 lacks an inventive step under PCT Article 33(3) as being obvious over Masutoshi et al. in view of Nippon Plast. Co. (JP 9-240404).

Masutoshi et al. meets all the limitations of claim 38 as set forth in item 1 above but lacks an arcuate air bag dispenser.

Nippon Plast. Co. teaches an arcuate air bag dispenser 13 used with a door 26 having arcuate tear seams (see Fig. 1).

From this teaching of Nippon Plast. Co., it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masutoshi et al. by providing an arcuate air bag dispenser, together with a matching arcuate tear seam, because this enables easy folding and expansion of the air bag (see the abstract of Nippon Plast. Co.).

8. Claims 11-14, 18, 19, 28 and 29 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest a rib extending integrally inward from a door inner surface toward a reaction plate (claims 11-13), a reaction plate fastened to a door inner surface by a screw threaded into a boss extending integrally inward from a door (claim 14), a tether connected to a support structure by a sliding hinge (claims 18 and 19), or a screw boss extending integrally inward from a tubular channel (claims 28 and 29).

----- NEW CITATIONS -----

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Sheet 11

Continuation of: Boxes I - VIII

JP 05-185896 A (MASUTOSHI et al.) 27 JULY 1993, see entire document.

US 4,893,833 A (DISALVO et al.) 16 JANUARY 1990, see entire document.

US 5,564,731 A (GALLAGHER et al.) 15 OCTOBER 1996, see entire document.

VII. CERTAIN DEFECTS IN THE APPLICATION (Continued):

"configured";

at page 27, line 17, "28, 30" should be "228, 230";

at page 28, lines 24, 25 and 28, "248 " should be "248";

at page 29, lines 22 and 25, "248 " should be "248";

at page 30, line 8, "350 ." should be "350 , 360 .";

at page 30, lines 17, 23 and 25, "portion" should be deleted;

at page 31, line 6, "320" (each occurrence) should be deleted;

at page 33, lines 15-25, "Three examples....adjacent a tear seam 316." should be deleted since the drawings do not include Figures 36-38;

at page 34, line 3, "341" should be "326";

at page 34, line 17, "32" should be "332";

at page 34, line 18, "34" should be "334";

at page 34, lines 19-20, "Figure 29 and...of Figure 30," should be "Figure 29,";

at page 34, line 20, "a" should be deleted;

at page 35, line 16, "28" should be "27";

at page 35, line 17, "10 " should be "310 ";

at page 36, line 9, "portion" should be deleted;

at page 36, lines 13 and 15, "361" should be "364"; and

in the abstract, at line 13, "reaction, plate" should be "reaction plate".

5. The description is objected to because the detailed description of the drawings skips from a description of Figs. 1-17 (which concludes on page 23) to a description of Figs. 31-34 (pages 23-26), then back to a description of Figs. 18-30 (pages 26-36). This organization of the description is confusing. Further, if the application becomes a patent, the patent will be difficult to consider as a reference.

6. The description is objected to as failing to provide proper antecedent basis for the claimed subject matter. The description fails to describe the reaction plate as being made of "thermoplastic urethane" (claim 17). Note that, at page 24, lines 29-32, the reaction plate is described as being made of "thermoplastic elastomer".

7. Claims 1-39 are objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof:

in claim 1, at line 12, "deployment and along" should be "deployment along";

in claim 23, at line 3, "door" should be inserted before "perimeter";

in claim 25, at line 2, "door" should be inserted before "outer surface"; and

in claim 27, at line 2, "pair" should be "first and second".

VIII. CERTAIN OBSERVATIONS ON THE APPLICATION (Continued):

examiner suggests: at line 10, change "outer surface." to "outer surface thereof."

Claim 37 contains an improper Markush grouping. The examiner suggests: at lines 2-3, change "includes any one or more materials from a group of materials including" to "is selected from the group consisting of".

In claim 38, at line 4, the term "the air bag canister opening" lacks proper antecedent basis.

In claim 40, at line 5, the term "the closed position" lacks proper antecedent basis. The examiner suggests: at line 5, change "the" to "a".

Claim 41 is indefinite because it reintroduces the terms "an air bag door", "a door perimeter" and "a frangible marginal edge", rather than referring to the same terms which were introduced in claim 40.

Claims 40 and 41 are indefinite for the reasons given in item 1 above.